

**Corinth Wood Pellet Corp.  
Penobscot County  
Corinth, Maine  
A-956-71-A-N(SM)**

**Departmental  
Findings of Fact and Order  
Air Emission License  
New License**

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Corinth Wood Pellet Corp. (Corinth Wood Pellets) of Corinth, Maine has applied for a new air emission license to permit the construction and operation of two direct wood-fired rotary dryers for their wood pellet manufacturing operation.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Fuel Burning Equipment**

<b><u>Equipment</u></b>	<b><u>Max. Capacity (MMBtu/hr)</u></b>	<b><u>Max. Firing Rate</u></b>	<b><u>Fuel Type, % sulfur</u></b>	<b><u>Post Comb. Controls</u></b>	<b><u>Stack #</u></b>
Wood-fired Burner #1	20	1.26 tons/hr <sup>1</sup>	wood chips/shavings/ sawdust, %S negligible	multiple cyclone	1
Wood-fired Burner #2	20	1.26 tons/hr <sup>1</sup>	wood chips/shavings/ sawdust, %S negligible	multiple cyclone	2

<sup>1</sup> Based on a 50%/50% softwood/hardwood blend @ 12% moisture by weight from the Rotary Dryer

### Process Equipment

<u>Equipment</u>	<u>Max. Process Feed Rate</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Rotary Dryer #1	22.2 <sup>2</sup> tons/hr	multiple cyclone	1
Rotary Dryer #2	22.2 <sup>2</sup> tons/hr	multiple cyclone	2
Screening Operation	N/A	none	Fugitive
Fuel/Feed Stock Conveying Systems	N/A	none	Fugitive

<sup>2</sup> Based on a 50%/50% softwood/hardwood blend @ 50% moisture by weight supplied to Rotary Dryer

#### C. Application Classification

A new source is considered a major source based on whether or not expected emissions exceed the “Significant Emission Levels” as defined in the Department’s regulations. The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

<u>Pollutant</u>	<u>Max. Future License (TPY)</u>	<u>Sig. Level</u>
PM	23	100
PM <sub>10</sub>	23	100
SO <sub>2</sub>	0.5	100
NO <sub>x</sub>	4	100
CO	41	100
VOC	31	50

The Department has determined the facility is a minor source and the application has been processed through Chapter 115 of the Department’s regulations.

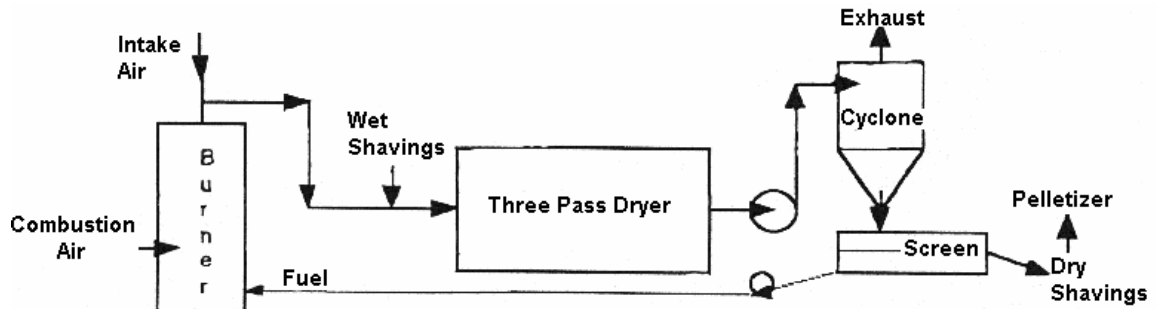
## II. BEST PRACTICAL TREATMENT (BPT)

#### A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas. BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department’s regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Process Description

Corinth Wood Pellets plans to produce fuel for pellet-fired wood stoves. The facility will operate two wood pellet processing lines each consisting of a triple-pass rotary dryer capable of processing 22.2 tons/hr of wood chips/shavings/sawdust (based on 50% moisture by weight) utilizing a direct wood-fired burner with a maximum heat input of 20 MMBtu/hr.



Wet wood chips/shavings/sawdust will be received at the facility and introduced into either one of two triple-pass rotary dryers with hot air supplied by the exhaust gas from the direct wood-fired burners. The dryers reduce the moisture content of the wood from approximately 50% by weight to 12% by weight, or lower. The exhaust from each rotary dryer enters a multiple cyclone, which separates the dried wood material from the air. The dried wood material that doesn't pass through the screen is made into pellets, bagged, and sold as wood pellet fuel. The dried sawdust-like undersized wood particles that fall through the screen are conveyed back to the direct wood-fired burners as fuel, where they are fired in semi-suspension to enhance complete combustion.

C. Rotary Dryers (#1 & #2)

Corinth Wood Pellets proposes to operate two triple-pass rotary dryers capable of processing 22.2 tons/hr of wood chips/shavings/sawdust (based on 50% moisture by weight) utilizing direct wood-fired burners each with a maximum heat input of 20 MMBtu/hr. The rotary dryers will be used to dry wood chips/shavings/sawdust for the production of wood pellets to be used in pellet-fired wood stoves.

The direct wood-fired burners operate with automatic combustion controls to maintain a combustion temperature of 1400°F. Due to the combination of high combustion temperatures and the use of dry (12% moisture by weight) wood materials as fuel, the burner will produce relatively low amounts of sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOC). Combustion temperatures are not so high as to cause the creation of thermal NO<sub>x</sub> (generally occurring at temperatures of 2000°F or higher). Ash that is generated from combustion is carried along with the hot flue gases into the rotary dryers

where the gases and ash come into direct contact with the wet wood chips/shavings/sawdust being dried. This direct-contact process removes much of the ash from the exhaust stream. The gases from the rotary dryers which include the burner exhaust gases exhaust to the atmosphere through a multiple cyclone which separates the wood materials from the exhaust stream. MEDEP Chapter 101 limits opacity from the multiple cyclone exhaust to 30% on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.

The rotary dryers are designed to operate with an inlet air temperature from the burner of between 750°F and 850°F. The manufacturer indicates that at higher temperatures the hot gases may cause the resin in the wood to “cook out” creating blue, hazy visible emissions from the multiple cyclone exhaust. To prevent the emission of this blue haze, the rotary dryers shall be operated with a maximum inlet air temperature of 800°F.

A summary of the Department’s BACT determination for the direct wood-fired Rotary Dryers (#1 & #2) is the following:

1. The SO<sub>2</sub> lb/MMBtu emission limit is based on AP-42 emission factor data for wood-fired units dated 7/01.
2. PM, PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC lb/oven-dried ton (ODT) of wood processed emission limits are based on AP-42 emission factor data for Wafer Board/Oriented Strandboard Manufacturing, dated 3/02. The PM emission rate derived from AP-42 is more stringent than the PM emission standard contained in either MEDEP Chapters 103 or 105.
3. Visible emissions from each Rotary Dryer multiple cyclone stack (Stack #1 & #2) shall not exceed 30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period.

**D. Fugitive Emissions**

Visible emissions from fugitive emission sources located at the facility (including fuel/wood material stockpiles and roadways) shall not exceed 20 percent opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour.

**E. General Process Emissions**

Visible emissions from any general process source (including the screening operation, the fuel/wood material conveying systems, and the pellet bagging operations) shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period.

F. Annual Emissions

Corinth Wood Pellets shall be restricted to the following annual emissions, based on a 12 month rolling total:

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**

(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO*	VOC
Total TPY	23	23	0.5	4	41*	31

\* note: CO emissions are not included in determining the annual license fee

### III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

### ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-956-71-A-N subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted

### STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).

- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]

- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
    - 2. pursuant to any other requirement of this license to perform stack testing.
  - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
  - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [MEDEP Chapter 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
  - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
  - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [MEDEP Chapter 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for

the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]

- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

#### **SPECIFIC CONDITIONS**

(16) **Rotary Dryers (#1 & #2)**

- A. Rotary Dryers #1 & #2 shall not process more than 28,000 tons/year (based on 50% moisture by weight) of wood materials combined, including the wood materials burned in the wood-fired burners. [MEDEP Chapter 115, BACT]
- B. The wood-fired burners associated with the Rotary Dryers shall fire wood materials consisting of woodchips/shavings/sawdust. [MEDEP Chapter 115, BACT]
- C. Emissions from each Rotary Dryer (#1 & #2) shall not exceed the following [MEDEP Chapter 115, BACT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Rotary Dryer	36.6	36.6	0.5	5.7	65.5	48.8

- D. The temperature of exhaust gases entering each rotary dryer shall not exceed 800°F, except during periods of startup, shutdown, or malfunction. [MEDEP Chapter 115, BACT]
- E. The inlet temperature of each rotary dryer shall be monitored on a continuous basis for a minimum of 95% of the time the rotary dryers are operating, except during periods of startup, shutdown, or malfunction. The inlet temperature of each rotary dryer shall be recorded at least once per shift. The date and time of each temperature reading shall also be recorded. Each temperature



monitoring system shall be installed, operated, maintained, and calibrated in accordance with the manufacturer's recommendations.

- F. Visible emissions from either Rotary Dryer multiple cyclone stack (Stack #1 or #2) shall not exceed 30% opacity on a 6-minute block average basis, except for no more than two 6-minute block averages in a 3-hour period. [MEDEP Chapter 101]
  - G. Exhaust gases from the wood-fired burners shall be directed through the rotary dryers and multiple cyclones except during periods of startup, shutdown, or malfunction when the exhaust gases may be diverted through the associated bypass stack. These periods shall be limited to no more than two (2) hours per event. If the startup, shutdown, or malfunction event lasts longer than 2 hours, Corinth Wood Pellets shall either shut the unit down for at least a one hour period or the opacity limit in Condition (16)F above shall apply to the visible emissions from the bypass stack.
- (17) **Fugitive Emissions**  
Visible emissions from fugitive emission sources located at the facility (including fuel/feed stock stockpiles and roadways) shall not exceed 20 percent opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour. [MEDEP Chapter 101]
- (18) **General Process Sources**  
Visible emissions from any general process source (including the screening operation, the fuel/wood material conveying systems, and the pellet bagging operations) shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [MEDEP Chapter 101]
- (19) **Malfunction and Breakdown**  
Corinth Wood Pellets shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605).
- (20) **Startup, Shutdown, and Malfunction Recordkeeping**  
Corinth Wood Pellets shall record each startup, shutdown, and malfunction event including start time, end time, duration, cause, and method utilized to minimize the duration of the event and/or to prevent a reoccurrence. [MEDEP Chapter 115]
- (21) **Annual Emission Statement**  
In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;  
or
- 2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator  
Maine DEP  
Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by July 1<sup>st</sup> or as otherwise specified in Chapter 137.

**(22) Air Toxics Emission Statement**

If Corinth Wood Pellets exceeds the thresholds for HAPs listed in Appendix A of MEDEP Chapter 137 in an inventory year, in accordance with MEDEP Chapter 137 the licensee shall report, no later than July 1<sup>st</sup> every three years (2008, 2011, 2014 etc.) or as otherwise stated in Chapter 137, the information necessary to accurately update the State's toxic air pollutants emission inventory by means of a computer program supplied by the Department or a written emission statement containing the information required in MEDEP Chapter 137.

NOTE: Based on AP-42 emission factors for direct wood-fired rotary dryers, Corinth Wood Pellets will most likely exceed the Chapter 137 thresholds of HAPs should the facility exceed the processing of 600 tons of wood (based on 50% moisture) in a calendar year.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator  
Maine DEP  
Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

Phone: (207) 287-2437

[MEDEP Chapter 137]

Corinth Wood Pellet Corp.  
Penobscot County  
Corinth, Maine  
A-956-71-A-N(SM)

11

Departmental  
Findings of Fact and Order  
Air Emission License  
New License

(23) **Payment of Annual License Fee**

Corinth Wood Pellets shall pay the annual air emission license fee within 30 days of October 31<sup>st</sup> of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS                      DAY OF                      2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
DAVID P. LITTELL, COMMISSIONER

**The term of this license shall be five (5) years from the signature date above.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: September 26, 2006  
Date of application acceptance: September 26, 2006

Date filed with the Board of Environmental Protection: \_\_\_\_\_

This Order prepared by Eric Kennedy, Bureau of Air Quality.